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What is Claimed is:

1. A wavelength detector comprising:

an optical structure receiving an input beam, the optical structure outputting at least three wavelength dependent two-beam interference signals, each wavelength dependent two-beam interference signal having a different phase offset;

a detector receiving the at least three wavelength dependent two-beam interference signals and outputting an electrical signal representative of each wavelength dependent two-beam interference; and

a processor receiving the at least three electrical signals from the detector and generating a composite control signal.

2. The wavelength detector of claim 1, wherein the processor used phase shifting interferometric techniques to generate the composite control signal.

3. The wavelength detector of claim 1, wherein the optical structure comprises a patterned aperture introducing the phase difference between the wavelength dependent two-beam interference signals.

4. A wavelength detector comprising:

a partial reflector receiving a beam from a light source;

a patterned aperture;

a retro-reflector, wherein a first portion output from the partial reflector is directed to the patterned aperture and a second portion output from the partial reflector is directed to the retro-reflector, the retro-reflector directing the second portion to the patterned aperture such that the first portion and the second portion interfere; and

a detector receiving interfering signals from the patterned aperture, the patterned aperture outputting at least two periodic signals offset from one another.

5. The wavelength detector of claim 4, wherein the partial reflector and the patterned aperture are integral.

6. The wavelength detector of claim 4, further comprising a diffractive grating which deflects a portion of the beam into higher orders, one of said higher orders being incident on the partial reflector.

7. The wavelength detector of claim 4, wherein the partial reflector, the retroreflector and the patterned aperture are on a substrate.

8. The wavelength detector of claim 7, wherein the input beam is incident on the substrate at an angle.

9. The wavelength detector of claim 7, wherein the substrate includes more than one substrate bonded together.

10. The wavelength detector of claim 4, wherein the patterned aperture includes at least two sections having a same basic pattern, but being out of phase with one another.

11. The wavelength detector of claim 4, wherein the partial reflector, the patterned aperture and the retroreflector are bonded together on a wafer level and diced to form that portion of the wavelength locker.

12. The wavelength detector of claim 4, wherein said detector is an array of individual detectors.

13. The wavelength detector of claim 4, further comprising a reference detector receiving part of the beam.

14. The wavelength detector of claim 4, wherein all optical elements for providing the beams to the patterned aperture are on a single wafer or a wafer bonded thereto.

15. A wavelength monitor which monitors a wavelength of a beam, said wavelength monitor comprising:

a first detector;

a second detector;

a third detector;

a first filter in an optical path upstream of the first detector;

a second filter in an optical path upstream of the second detector;

a third filter in an optical path upstream of the third detector, the first, second, and third filters having different filter properties from one another;

an optical element which directs at least a portion of the beam onto each of said first, second, and third detectors through said first, second and third filters, respectively; and,

a processor receiving outputs from said first, second and third detectors, and determining the wavelength of the beam.

16. The wavelength monitor of claim 15, wherein at least one of said first, second, and third filters is a patterned aperture receiving two beams incident thereon.

17. The wavelength monitor of claim 15, wherein each of said first, second, and

third filters is a patterned aperture receiving two beams incident thereon, each patterned aperture being different from the others.

18. The wavelength monitor of claim 16, wherein each patterned aperture has a same basic pattern and is out of phase with each of the other patterned apertures.

19. The wavelength monitor of claim 18, wherein each patterned aperture is out of phase with at least one of the other patterned apertures by a same amount.

20. The wavelength monitor of claim 16, wherein phase differences between patterned apertures cover 2π.

21. The wavelength monitor of claim 15, wherein said first, second and third detectors are part of a single detector array.

22. The wavelength monitor of claim 15, wherein there is no reference detector.

23. The wavelength monitor of claim 15, wherein at least one of said first, second and third filters output a sinusoidal signal with respect to wavelength.

24. The wavelength monitor of claim 15, wherein each of said first, second and third filters output a sinuisoidal signal with respect to wavelength.

25. The wavelength monitor of claim 15, wherein one of said first, second and third filters outputs a linear signal.

26. A wavelength monitor which monitors a wavelength of a beam, said wavelength monitor comprising:

a first detector receiving a first signal;

a second detector receiving a second signal;

a third detector receiving a third signal, wherein at least two of the first, second, and third signals are periodic with respect to wavelength and a set having a value for each of the first, second and third signals represents a unique wavelength within a continuous operational range;

an optical element which directs at least a portion of the beam onto each of said first, second, and third detectors; and

a processor receiving outputs from said first, second and third detectors, and determining the wavelength of the input beam.

27. The wavelength monitor of claim 26, wherein at least one of said first, second, and third signals is created using a patterned aperture having two beams incident thereon.

28. The wavelength monitor of claim 26, wherein each of said first, second, and third signals are created using different patterned apertures having two beams incident thereon.

29. The wavelength monitor of claim 28, wherein said different patterned apertures are a same basic pattern out of phase with one another.